

## **Large On-site Sewage System (LOSS)**

### **Frequently Asked Questions**

**Question #1:** *I'm working on a commercial development to be served by a proposed on-site sewage system with a design flow greater than 3,500 gallons per day (gpd). Is this system under state Department of Health (DOH) jurisdiction?*

Yes, it is. DOH has authority statewide for “large on-site sewage systems” (LOSS) – systems with design flows between 3,500 and 14,500 gpd. Outlined below are regulatory responsibilities in Washington State:

- Local Health Jurisdictions (LHJs) have jurisdiction for on-site systems with design flows < 3,500 gpd.
- DOH has jurisdiction for LOSS (systems with design flows between 3,500 and 14,500 gpd).
- DOH has contracted LOSS program administration responsibilities to LHJs in Clallam, King, Kitsap, San Juan and Thurston Counties.
- Department of Ecology has jurisdiction for Lagoons (systems > 3,500 gpd that utilize mechanical treatment, and any on-site system with flows greater than 14,500 gpd)

**Question #2:** *I'm working on a project that is a recreational development that will be served by on-site sewage disposal. There are two facilities at the development each located a substantial distance apart. It is desirable to install two separate sewage systems to serve each facility in lieu of one system serving both facilities. Each facility generates sewage flows less than 3,500 gallons per day (gpd) but the combined total flow is greater than 3,500 gpd. Are these systems under Department of Health (DOH) jurisdiction?*

No. DOH has authority for on-site sewage systems greater than 3,500 gpd but less than 14,500 gpd at any common point. If the two systems were completely separate systems with no connecting points, then each system would be under local health jurisdiction.

**Question #3:** *How does DOH regulate my project?*

DOH approval is required for all new LOSS and for any substantial repair or modification of an existing LOSS. DOH regulates LOSS by performing the following functions:

- Engineering plan review/construction approvals
- Inspections (pre-site and final)
- Operating permits

**Question #4:** *How does DOH bill and collect fees for LOSS projects?*

DOH charges fees for inspections (pre-site and final) and time spent associated with review and approval of engineering documents. Charges for pre-site and final inspections are a fixed fee per inspection. Other services that relate to engineering document review and approvals are charged based on billable hours with a minimum charge for 8 hours. The owner of the LOSS will be invoiced for the DOH services. Instructions for remittance of invoices are printed on each invoice and are paid to the DOH Revenue Unit in Olympia. (For additional information refer to policy WMP-001 “Fees and Billable Hours” included with this packet.)

## **Project Review/Approval Process**

**Question #5:** *What is the review/approval process and where do I start?*

1. Applicant obtains the LOSS Project Submittal Information Packet from DOH.
2. Applicant completes the *LOSS Pre-Design Document* (included with LOSS Project Submittal Information Packet) and submits to DOH for review.
3. DOH determines if the project is conceptually feasible, and if so, schedules a pre-site inspection. (Further project process details are outlined in the “LOSS Project Application Process Flowchart” [included with this packet]).

**Question #6:** *Do I need to provide a project representative as a single point of contact for DOH to communicate with during the review and approval process of a LOSS?*

Yes. Typically, DOH communicates with the engineer as the representative for the LOSS owner or developer.

**Question #7:** *Is DOH a “one-stop” permit center or will I need other permits/approvals?*

No. DOH is not a “one-stop” permit center. DOH is only responsible for review/approval of engineering and related documents pertaining to the LOSS. Other permits/approvals associated with the project (such as water rights permits, SEPA compliance, local building permits, zoning approvals, etc.) must be obtained from the appropriate regulatory agency and some may be needed prior to DOH approval of the LOSS.

## **Engineering/Management Requirements**

**Question #8:** *Do I need to hire an engineer or contract for any other professional services?*

The LOSS Pre-Design Document may be completed by someone other than an engineer. Experience has shown however, that it is beneficial to employ an engineer early in the planning phase of the project. *Engineering Reports, Plans and Specifications, Construction Reports, As-Built Drawings*

*and Operation and Maintenance Manuals submitted for DOH review and approval must all be prepared and stamped by an engineer licensed in the state of Washington. An engineer or other qualified professional may provide other LOSS project related services, such as: preparing soil analyses, hydrogeologic assessments, management agreements, surveys, easements, etc.*

**Question #9:** *Are there any special management requirements and who is responsible for the LOSS after it is approved?*

Ownership and management of the LOSS are a critical element that must be identified early in the planning phases of the project. DOH does not manage LOSS. Owners are responsible for proper operation and maintenance of their LOSS. Systems owned by a single individual or entity may be managed by the owner or contracted to a qualified individual or firm. The owner is required to sign a *management agreement* with DOH. For residential subdivisions where lots are individually owned, a *public entity* is required to own or manage the LOSS, or to act as a third party trust. A signed management agreement with the municipal entity or *letter of intent to enter into an agreement* must be submitted to DOH prior to scheduling a pre-site inspection. Signed management agreements must be recorded at the local county assessors office against all lots served by the LOSS and lots or parcels on which the LOSS components are located. A copy of the recorded agreement must be forwarded to DOH.

## **Soil/Site Evaluation**

**Question #10:** *Do I need to do any work before the DOH pre-site inspection?*

Yes. An engineer or soil scientist must perform an initial soil/site evaluation to determine site suitability and characteristics such as soil type, depth, vertical separation, proximity to surface and ground water, etc. A soil-loading rate based on soil texture should be proposed. This information must be included with the LOSS Pre-Design Document.

**Question #11:** *If I pay for preliminary soil/site evaluation, why is the DOH pre-site inspection necessary?*

DOH's role is to confirm the initial soil/site characterization and the loading rate proposed by your engineer or soil scientist. This is a critical element of the project and it is important that DOH concurs early in the design phase of the project.

**Question #12:** *How is a pre-site inspection scheduled? Who needs to be there and what needs to be done?*

The pre-site inspection may be scheduled only after DOH has reviewed the LOSS Pre-Design Document and determined the project to be conceptually feasible. DOH will notify the applicant of its decision and if the project appears to be feasible the applicant may then schedule the inspection. The project engineer or soil scientist should be present at the inspection, as well as a backhoe and operator. DOH policy is to invite the local health officer to pre-site inspections. The number and configuration of the test pits are site specific and should be agreed on in advance. A comprehensive soil evaluation over the entire area (or sub-field) must be completed. Test pits should be at least 6 feet deep and conform to Washington State Department of Labor and Industries standards.

## **Design**

**Question #13:** *Are there any “absolute” design elements I must deal with as I develop this project?*

Yes. The disposal component of a LOSS requires pressure distribution. A LOSS may only be installed on a site with slopes less than 30%, in suitable soils of Types 1 - 5 with a minimum of three feet of vertical separation beneath the bottom of the drainfield trenches and any restrictive layer. Alternative systems, such as a mound or intermittent sand filter, may not be used to make up vertical separation. DOH policy has not allowed drainfield size reductions for LOSS; except under special circumstances such as repairs with site constraints. Experimental systems are not allowed for LOSS.

**Question #14:** *Who determines the project daily design flow?*

The sewage design flows for projects are determined by the professional engineer. Design flow tables included in the “Design Standards for Large On-Site Sewage Systems” should be used in generating design flow estimates. For sources not noted in the tables, design flow information may be found in other sources such as: Department of Ecology, Criteria For Sewage Works Design or U.S. EPA, Design Manual: On-site Wastewater Treatment and Disposal Systems. Deviations from the flows found in the tables or published references may be considered for non-residential development with adequate justification supporting the deviation. Water use or sewage flow figures from other similar establishments (at least 3) may be used to compare design flows however, must take into account reasonable peaking factors. DOH will review and consider the design flows presented in the engineering documents for concurrence.

## **Construction Planning**

**Question #15:** *Construction Quality Assurance is important. What does DOH do or require to assure construction quality?*

DOH is not responsible for quality assurance during the LOSS construction project. The professional engineer is responsible for assuring that adequate inspections are completed during construction to confirm that the LOSS has been installed in accordance with the approved plans and specifications. The construction plans and specifications must include a schedule of inspections that will be completed by the professional engineer. Following substantial completion of the LOSS, but prior to covering the drainfield laterals, DOH shall be notified to complete a final inspection.

A successful operational test must be completed and witnessed by the professional engineer prior to the DOH inspection. The primary purpose of the final inspection completed by DOH is to observe and verify that the LOSS appears to function as designed and note any apparent deficiencies. Uniform distribution in the drainfield areas must be witnessed during the inspection by a “squirt” test; therefore adequate water shall be available at the site for the purpose of completing this test. It is recommended that the dosing tanks have been filled with water prior to the DOH inspection.

## **Post Construction/Certification Forms, As-Built, O&M Manual**

**Question #16:** *What needs to be done after the system has passed DOH final inspection?*

Within 60 days following construction completion and prior to use of the LOSS, the professional engineer must affix his/her engineer's seal, complete, and sign a construction report (certification form) that states that the LOSS was constructed in accordance with the approved construction plans and specifications. A set of "as-builts" must be submitted with the certification form. A LOSS Operation and Maintenance Manual completed and stamped by a professional engineer must be submitted to DOH for approval. Following receipt of the completed certification form an Operating Permit will be issued to the LOSS owner. Annually and prior to the permit expiration date, the LOSS owner shall submit to DOH a report of the operation and maintenance performed on the LOSS. Details and requirements of the annual report shall be included in the Operation and Maintenance Manual.